

Application Number 10/565042
Response to the Office Action dated 02/13/2008

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Canceled)

2. (Canceled)

3. (Canceled)

4. (Currently Amended) A heat resistant electret comprising a metal member and a heat resistant electret material that comprises a fluorocarbon resin film and is disposed on adhered to a surface of the metal member,

wherein the fluorocarbon resin film comprises is a modified polytetrafluoroethylene, and

a residual rate of a surface electric potential after the electret is allowed to stand at 270°C for 10 minutes is at least 78%.

5. (Original) The heat resistant electret according to claim 4, wherein the modified polytetrafluoroethylene is a copolymer obtained by copolymerizing 99.0 to 99.999 mol% of tetrafluoroethylene and 1.0 to 0.001 mol% of perfluorovinyl ether.

6. (Original) The heat resistant electret according to claim 4, wherein the heat resistant electret material has a dielectric constant of 2.1 or less and a volume resistivity of at least $1.0 \times 10^{18} \Omega\text{-cm}$.

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7. (Original) The heat resistant electret according to claim 4, wherein the metal member is formed of at least one selected from brass, aluminum, stainless steel, copper, titanium, nickel silver, phosphor bronze, an alloy thereof, and a metal having a surface layer formed by plating or evaporation coating therewith.

8. (Original) The heat resistant electret according to claim 4, wherein the metal member is a metal plate.

9. (Currently Amended) A heat resistant electret comprising a metal member and a resin film adhered to a surface of the metal member,

wherein the resin film comprises polytetrafluoroethylene,

a contact angle of a water droplet on one surface of the resin film that faces the metal member is not greater than 110° , and

~~said one surface of the resin film is adhered to the metal member~~

a contact angle of a water droplet on a surface of the resin film that does not face the metal member is not smaller than 111° .

10. (Original) The heat resistant electret according to claim 9, wherein a 180° peel strength between the metal member and the resin film is at least 0.5 N/cm.

11. (Original) The heat resistant electret according to claim 9, wherein the resin film has a dielectric constant of 2.1 or less and a volume resistivity of at least $1.0 \times 10^{18} \Omega\text{-cm}$.

12. (Original) The heat resistant electret according to claim 9, wherein the metal member is a metal plate.

13. (Original) The heat resistant electret according to claim 9, wherein the metal member is formed of at least one selected from brass, aluminum, stainless steel, copper, titanium, nickel silver, phosphor bronze, an alloy thereof, and a metal having a surface layer formed by plating or evaporation coating therewith.

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14. (Original) A heat resistant electret comprising a metal member and a resin film adhered to a surface of the metal member,
wherein the resin film comprises polytetrafluoroethylene, and
only a surface on the metal member side of the resin film has been subjected to an adhesion-improving treatment.

15. (Original) The heat resistant electret according to claim 14, wherein the adhesion-improving treatment is at least one treatment selected from a chemical conversion treatment, a corona treatment, a plasma treatment, and a sputtering treatment.

16. (Original) The heat resistant electret according to claim 14, wherein a 180° peel strength between the metal member and the resin film is at least 0.5 N/cm.

17. (Original) The heat resistant electret according to claim 14, wherein the resin film has a dielectric constant of 2.1 or less and a volume resistivity of at least $1.0 \times 10^{18} \Omega\text{-cm}$.

18. (Original) The heat resistant electret according to claim 14, wherein the metal member is a metal plate.

19. (Original) The heat resistant electret according to claim 14, wherein the metal member is formed of at least one selected from brass, aluminum, stainless steel, copper, titanium, nickel silver, phosphor bronze, an alloy thereof, and a metal having a surface layer formed by plating or evaporation coating therewith.